

# ABSTRACT

A magnetostrictive torque sensor comprises a rotary shaft rotating around its center axis and having a magnetostrictive characteristic and a cylindrical ferrite magnetic core disposed at a predetermined distance from the outer periphery of the rotary shaft and coaxially with the rotary shaft and having on its inner peripheral surface a coil serving to detect the strain of the rotary shaft and having an insulating cover. The cylindrical ferrite magnetic core has a pair of opposed coil-forming inner peripheral surfaces defined by dividing the inner peripheral surface into two parts along a plane including the center axis. The coil has, on the respective opposed paired inner peripheral surfaces, a first coil including a going-current coil and a returning-current coil disposed in the same position at an angle of  $+45^\circ$  to the center axis, adapted to flow a going current and a returning current in the same direction, and connected in series and a second coil including a going-current coil and a returning-current coil disposed in the same position at an angle of  $-45^\circ$  to the center axis, crossing the first coil at right angles, adapted to flow a going current and a returning current in the same direction, and connected in series.